

MULTIMEDIA



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MULTIMEDIA UNIVERSITY

FINAL EXAMINATION

TRIMESTER 1, 2018/2019

BSI3124 – SEMINAR IN INVESTMENT

(All sections / Groups)

25 October 2018

9 AM – 11 AM

(2 Hours)

INSTRUCTIONS TO STUDENTS

1. This question paper consists of 8 pages. There are total 4 questions.
2. Answer ALL questions.
3. Marks are shown at the end of each question.

Answer all questions in the answer booklet provided.

QUESTION 1 (25 MARKS)

(a) Read the extracted journal and answer the following question (i) and (ii).

Do investors pay a premium for going green? Evidence from alternative energy mutual funds

Abstract

We studied the financial performance of alternative energy mutual funds using multifactor models and propensity score matching techniques. For a sample of alternative energy mutual funds quoted in EUR and in USD for the period 2010–2016, we found that alternative energy funds underperformed corporate and socially responsible mutual funds in terms of returns and downside risk protection. Our results are consistent with the idea that investors are paying a premium for going green via renewable energies.

1. Introduction

Deployment of renewable energies as an alternative to traditional energy sources has been the recent policy focus of many developed and emerging economies aiming to converge towards low-carbon and sustainable economies.¹ The renewable energy sector has consequently experienced fast growth and a significant increase in investment in recent years. The OECD [1] confirms that the contribution of renewable energies to the energy supply has increased in the last decade, although shares have tended to vary greatly; moreover, growth rates are very uneven across countries, with the contributions of a broad set of countries for the period 1990–2010 displaying divergence and dissimilar temporal patterns (Reboredo [2]).

Regarding investment, there has been a clear upward trend in global investment in renewable energies in recent years. According to Bloomberg New Energy Finance [3], total investment in clean energy amounted to 45 billion USD in 2004 and grew steadily to reach a peak of 182 billion USD in 2008; thereafter investment growth moderated (due to the global financial crisis), although it rebounded in 2011. Investment in renewable power and fuels (including small hydro-electric projects) was 285.9 billion USD in 2015, representing an increase of 5% from the previous year's figure of 273 billion USD and surpassing the previous 2011 peak of 278.5 billion USD. Regarding new markets in developing countries, renewable energy investment experienced rapid expansion in 2015, increasing by 19% over 2014 to reach 156 billion USD. Of the developing

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countries, China, Brazil, India and South Africa saw the largest increases in investment. Renewable energy investment continues to be dominated by solar and wind energies, which account for 92% of overall investment.

Although governments have traditionally been the most important source of funding for renewable energy projects, private investment has gradually been gaining ground as a source of capital. Scaling up and managing acceptance of renewable energy investments by the financial community is an important success factor in catalysing private investment and deploying alternative energy (see [4], [5]). The recent United Nations Climate Change Conference in Paris in 2015 drew attention to the importance of effective financing of renewable energy projects and the creation of suitable vehicles to facilitate such investments. As an alternative to direct investment in alternative energy company stocks, alternative energy mutual funds have been gaining popularity as investment vehicles, as they offer retail investors professionally managed global portfolios that include a wide range of renewable energies (wind, solar, geothermal, hydrogen and hydroelectric). Investors in alternative energy mutual funds naturally seek to achieve good financial performance while taking into account renewable energy and environmental concerns.

In this paper we study the financial performance of alternative energy mutual funds relative to corporate investment funds and socially responsible investment (SRI) funds, as financial performance has decisive implications for investment decisions and for the success of sustainable energy projects. In particular, we endeavour to answer two crucial questions: (1) do investors pay a green premium for investing in alternative energy investment funds? (2) do investors in alternative energy funds limit downside/upside risk? The answers to these questions will allow us to determine the price investors pay for going green. Incorporating renewable energy criteria in the portfolio selection process may negatively affect financial performance or may yield higher returns and lower risks. According to the portfolio theory (see [6]), renewable energy screening restricts diversification opportunities as the universe of stocks is narrower; hence, the risk-adjusted performance of these funds should be poorer than for other corporate mutual funds. In addition, green energy mutual funds invest in smaller firms that tend to be concentrated in a few industries (see [7]), and most of these firms manage incipient and innovative environmental projects (see [8] and [9]). Renewable energy projects may therefore be less financially attractive, as they typically offer a low return due to high production and innovative technology costs.

However, an opposite view is that renewable energy screening allows alternative energy companies with higher potential returns and better management to be identified, which ultimately results in a better financial performance and risk

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profile. Furthermore, since renewable energy technologies have been gaining competitive and technological ground over fossil fuels (see [10]), alternative energy mutual funds can benefit from the corresponding improvements in the financial performance of new energy firms (see [11]).

Although there is no empirical evidence on the plausibility of these opposing views regarding alternative energy mutual funds, previous empirical literature has found mixed evidence for the impact of SRI or of green screening on financial performance. Thus, it has been shown that SRI funds underperform corporate funds, meaning that investors do pay for ethical decisions ([12]); it has also been shown that the cost of excluding striking firms from portfolios on the basis of SRI criteria is high and independent of management skills ([13]). In contrast, Statman [14] and Bollen [15] argue that investors must gain some utility from the externalities of investing in a manner consistent with their beliefs. Notwithstanding, Nofsinger and Varma [16] and Becchetti et al. [17] reported that SRI funds outperformed corporate mutual funds during periods of financial crisis, and Briec and Kerstens [18] and Ito et al. [19] found that SRI funds outperformed conventional funds in the USA and in the EU. Contrarily, other empirical studies have concluded that the differences between SRI and corporate funds performance are statistically insignificant. Mill [20] found that there was no change in the performance of funds when these were switched to SRI funds. Similarly, in studies of different markets, Statman [21], Bauer et al. [22], Scholtens [23], Bauer et al. [24] and Leite and Cortez [25] reported no statistically significant differences in the performance of SRI and corporate funds. Renneboog et al. [26] provide a comprehensive review of the literature on SRI. As for environmental screening, Muñoz et al. [27] and Lesser et al. [7], [28] reported that green funds underperformed corporate funds in normal market periods but performed similarly in periods of market turbulence. Similarly, White [29] found that environmental mutual funds in the USA underperformed both general stock market returns and SRI returns. Climent and Soriano [30] showed that returns for US green mutual funds did not differ from returns for other corporate or SRI funds for the period 2001–2009. More recently, Ibikunle and Steffen [11] suggest that the risk-adjusted returns on green funds improve over time, citing green outperformance of black stocks over the 2012–2014 period.

Our study contributes to this strand of the literature by specifically examining the financial performance of alternative energy mutual funds. These environmentally friendly and socially responsible investment vehicles have been gaining prominence in terms of investment in renewable energy projects (see [31]); hence, scrutiny of their performance is of interest for investors and policymakers alike, as both agents are particularly concerned with the viability of renewable energy projects. Alternative energy mutual funds are a particular sub-set of green

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mutual funds, which include — in addition to renewable energies — sustainable construction, transport, water and waste management, energy efficiency and sustainable living. Alternative energy is featured specifically by innovative technology, high production costs and high investment requirements that, overall, merit specific consideration.

(Source: Reboredo, Quintela & Otero (2017) Do investors pay a premium for going green? Evidence from alternative energy mutual funds, Renewable and Sustainable Energy Reviews, Vol. 73, 512-520)

- (i) Identify the research problem. (7 marks)
- (ii) Discuss the research question that the researchers intend to carry out in the study. (7 marks)
- (b) Explain what the screening process is in social responsible investing/green investing. What are the positive and negative screenings? (11 marks)

QUESTION 2 (25 MARKS)

- (a) Discuss the implication of the efficient market hypothesis to technical analysis and fundamental analysis. (10 marks)
- (b) Define behavioural finance. (5 marks)
- (c) Define market anomalies. Explain January effect, size effect and neglected stocks. (10 marks)

QUESTION 3 (25 MARKS)

- (a) Differentiate between Capital Asset Pricing Model (CAPM) model and Arbitrage Pricing Theory (APT). (8 marks)
- (b) Discuss what factors have been included in behavioral asset pricing model. (4 marks)

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- (c) The excerpt is taken from the article of Monday Effect in Fama-French's RMW factor.

Table 1

Note: The magnitude of the Monday effect is measured by $\Delta = \alpha_1 - \alpha_{2-5}$ (where α_{2-5} is the nonMonday coefficient).

Day-specific intercept coefficients of Fama-French factor returns. The day-specific coefficients are estimated from Eq. (1) and reported in percentage points. *Resid* is the residuals of a regression of the RMW factor on the other four factors. t-statistics are in parenthesis. (*) under the Δ column denotes statistical significance at the 1% level.

	Mon	Tue	Wed	Thu	Fri	Non-Mon	Δ
Panel A. Full-sample results							
Mkt-Rf	-0.031 (-2.50)	0.027 (2.26)	0.077 (6.07)	0.047 (3.69)	0.091 (7.03)	0.060 (9.40)	-0.092 (-6.58)*
SMB	-0.041 (-5.46)	-0.026 (-3.54)	0.022 (2.92)	0.046 (6.19)	0.077 (10.27)	0.030 (7.82)	-0.070 (-8.43)*
HML	0.028 (4.52)	0.015 (2.55)	-0.007 (-1.12)	-0.009 (-1.49)	0.015 (2.43)	0.004 (1.28)	0.024 (3.51)*
RMW	0.049 (10.83)	0.024 (5.40)	-0.005 (-1.08)	-0.005 (-0.98)	-0.020 (-4.27)	-0.001 (0.63)	0.050 (8.76)*
CMA	0.012 (2.35)	0.005 (1.05)	0.004 (0.78)	0.008 (1.64)	0.012 (2.35)	0.007 (2.92)	0.005 (0.81)
Resid	0.032 (7.16)	0.027 (6.06)	0.010 (2.25)	0.011 (2.48)	0.004 (0.83)	0.013 (5.73)	0.019 (3.79)*
Panel B. 2001–2016 sub period							
Mkt-Rf	0.019 (0.63)	0.030 (1.07)	0.061 (2.17)	0.050 (1.74)	0.030 (1.01)	0.043 (2.89)	-0.024 (-0.71)
SMB	-0.008 (-0.45)	0.054 (3.07)	0.003 (0.15)	0.011 (0.61)	0.037 (2.00)	0.026 (2.91)	-0.034 (-1.73)
HML	0.002 (0.17)	0.012 (0.89)	-0.002 (-0.19)	-0.012 (-0.97)	0.025 (1.91)	0.006 (0.90)	-0.004 (-0.25)
RMW	0.047 (3.94)	0.018 (1.55)	-0.016 (-1.52)	-0.018 (-1.61)	0.000 (-0.03)	-0.004 (-0.71)	0.050 (3.88)*
CMA	-0.004 (-0.37)	-0.013 (-1.40)	0.010 (1.05)	0.012 (1.25)	0.003 (0.35)	0.003 (0.60)	-0.006 (-0.60)

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	Mon	Tue	Wed	Thu	Fri	Non-Mon	Δ
<i>Resid</i>	0.047	0.032	-0.010	-0.008	0.007	0.005	0.042
	(4.21)	(2.97)	(-1.00)	(-0.72)	(0.67)	(1.01)	(3.35)*

Source: Ülkü (2017). Monday Effect in Fama-French's RMW factors, *Economic Letters*, Vol.150, Pp. 44-47.

Based on Table 1, answer the following questions (i) and (ii)

(i) Explain the factors of SMB, HML, RMW and CMA. (8 marks)

(ii) Explain the results as shown Table 1. Which factor(s) is (are) the significant "Monday" factor to the asset pricing model for the full sample period? (Refer to the column Δ). (5 marks)

QUESTION 4 (25 MARKS)

(a) The excerpt is taken from the article of "Equity crowdfunding: First resort or last resort?".

Abstract

Prior research has focused on the factors that affect funding success on equity crowdfunding platforms, but a detailed understanding of the factors that drive firms to search for equity crowdfunding in the first place is lacking. Drawing on the pecking order theory, we argue that firms list on equity crowdfunding platforms as a "last resort"—that is, when they lack internal funds and additional debt capacity. In line with the pecking order theory, the empirical evidence shows that firms listed on equity crowdfunding platforms are less profitable, more often have excessive debt levels, and have more intangible assets than matched firms not listed on these platforms. We discuss the implications for theory and practice.

1. Introduction

For entrepreneurs, internal finance and debt finance are crucial to form and grow a venture (Berger and Udell, 1998; Cassar, 2004; Cosh et al., 2009). External equity finance (e.g., venture capital, angel finance) is usually unavailable (Berger and Udell, 1998) however, or entrepreneurs are unwilling to attract it because of fear of losing their independence (Sapienza et al., 2003). Recently, equity crowdfunding has emerged as a new source of external equity finance that plays an increasingly important role in the financing of young entrepreneurial firms

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(e.g., Ahlers et al., 2015; Bruton et al., 2015; Cumming and Vismara, 2017; Drover et al., 2017; Short et al., 2017; Vismara, 2016, Vismara, 2018). This phenomenon provides new opportunities for entrepreneurs, who can now target a broader group of external equity investors.

Research on equity crowdfunding.....is developing quickly. Scholars have focused on the success factors in raising equity crowdfunding (e.g., Ahlers et al., 2015; Ralcheva and Roosenboom, 2016; Vismara, 2016). For example, Ahlers et al. (2015) show that retaining equity and providing detailed information about risks make firms more successful on equity crowdfunding platforms. Scholars have also examined dynamics on equity crowdfunding platforms (e.g., Hornuf and Schwienbacher, 2018; Vismara, 2018; Vulkan et al., 2016) and outcomes after equity crowdfunding campaigns (e.g., Signori and Vismara, 2018). While all these studies have used samples of firms that are listed on equity crowdfunding platforms, firms do not appear on these platforms at random. Rather, entrepreneurs first need to decide whether they want to seek equity crowdfunding. Therefore, we address the following research question: *Which factors influence firms to search for equity crowdfunding and thus list on equity crowdfunding platforms?*

Source: Walthoff-Born, Schwienbacher and Vanacker (2018). Journal of Business Venturing, Vol. 33, Iss. 4, pp.513-533.

Based on the above excerpt, answer the following questions (i) and (ii).

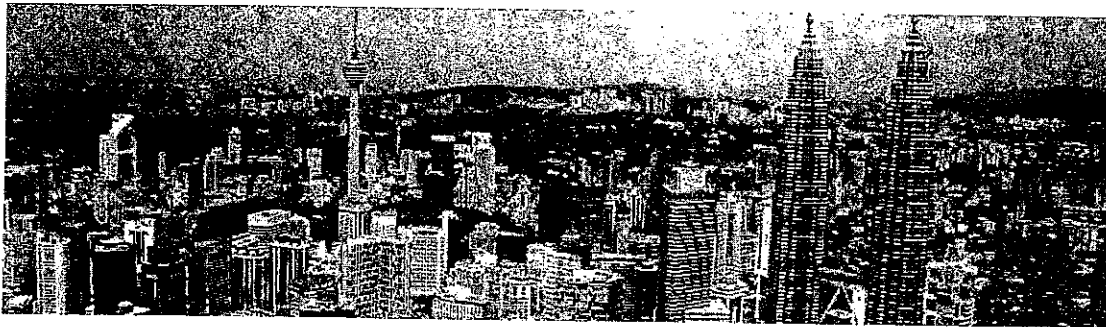
(i) What is equity crowdfunding? (5 marks)

(ii) How does equity crowdfunding work? (8 marks)

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(b) The extract is taken from Bursa Malaysia's website.

The Business Case for Sustainability



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Sustainable business is smart business. A strategic approach to long-term material risks and opportunities can make companies more resilient, more innovative and more attractive to investors, customers and potential employees. This article sets out the key drivers for sustainable business success.

Businesses do not operate alone. They both have an impact on, and are impacted by, their wider social, economic and environmental context. An understanding of these impacts, and the stakeholders who are impacted, is vital to understanding the business case for sustainability. Every organisation is unique. But each should be able to articulate a clear commercial rationale for taking action on responsibility and sustainability issues.

Mapping the Business Case

Sustainability issues present both risks and opportunities to companies. By minimising and mitigating risks, while maximising and leveraging opportunities, companies can create long-term business value.

Based on the above article taken from Bursa Malaysia's website, provide at least four benefits that firms may gain from practicing sustainable business practices.

(12 marks)

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